

**FULVIUS CHAGUENUS CARVALHO AND COSTA  
(HETEROPTERA: MIRIDAE: CYLAPINAE: FULVIINI):  
REDESCRIPTION AND RECOGNITION OF TYPE SPECIMENS**

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*Abstract.*—*Fulvius chaguenus* Carvalho and Costa is redescribed and its type specimens are recognized. In 1994, Carvalho and Costa revised the New World species of *Fulvius* Stål and included figures of the adult holotype and male genitalia of *F. chaguenus* and included it in their identification key from Paraguay, but inadvertently omitted the text description and type data for this species. Provided for *F. chaguenus* in this paper are a formal adult description, type data for the holotype and associated paratypes, figures of the adult and male genitalia, and diagnostic information to help separate it from other New World species of *Fulvius*.

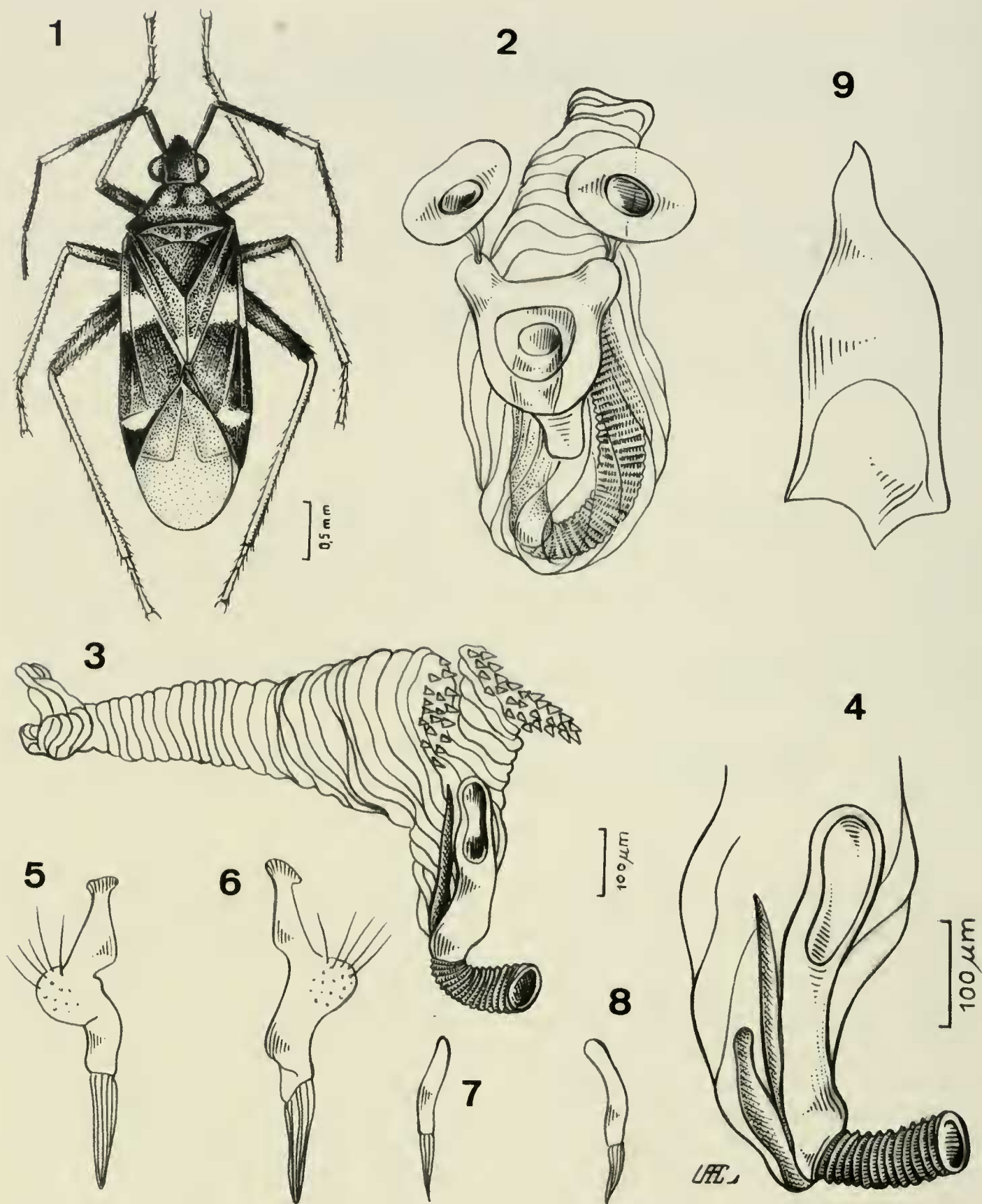
*Key Words:* Insecta, Hemiptera, Heteroptera, Miridae, Cylapinae, *Fulvius chaguenus* description, type data, Paraguay

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Carvalho and Costa (1994) revised the New World species of *Fulvius* Stål, described 22 new species, and included an identification key to 42 species. They included *F. chaguenus* in their key and illustrated the holotype and male genitalia, but omitted the text description and type information for this new species. According to the International Code of Zoological Nomenclature (1999), every new name published after 1930 must satisfy Article 11 (must be a published name, must use the Latin alphabet and be properly derived, and must be formed using binomial nomenclature) and Article 13 (e.g., must be accompanied by a description or definition that states, in words, characters that are purported to differentiate the taxon). Carvalho and Costa (1994) satisfied these ICZN re-

quirements and validated the name *F. chaguenus*. They did not, however, provide a formal description or identify type material. Since then, Kerzhner and Josifov (2001) cataloged the Palearctic fauna, and Ferreira and Henry (2002) described two new species of *Fulvius* from Brazil and discussed the biogeography of the Neotropical species. None of these authors noted the inadvertent omission of a description or type data for *C. chaguenus* Carvalho and Costa. Schuh (1995) cataloged the world *Fulvius*, but his literature review ended before the appearance of Carvalho and Costa's (1994) paper.

In this paper, we redescribe *F. chaguenus*, illustrate the adult and male genitalia, give specimen data for the holotype and paratypes from Paraguay, and furnish in-



Figs. 1-9. *Fulvius chaguenus*. 1, Adult male. 2, Aedeagus. 3, Vesica. 4, Vesica enlarged, showing spiculi and secondary gonopore. 5, Left paramere, caudal view. 6, Left paramere, anterior view. 7, Right paramere, caudal view. 8, Right paramere, anterior view. 9, Phallosome.

formation to help distinguish it from other species of *Fulvius*.

*Fulvius chaguemus* Carvalho and Costa  
(Figs. 1–9)

*Fulvius chaguemus* Carvalho and Costa  
1994: 68.

**Diagnosis.**—Characterized by the large size (length greater than 4.00 mm in males), relatively short cuneus, and morphology of the male genitalia (Figs. 2–7), particularly the two fields of membranous spines on the vesica (Fig. 3).

**Description.**—*Male* (holotype first, followed by range; n = 3): Length 4.08 mm, 4.04–4.12 mm; width 1.32 mm, 1.32–1.40 mm. *Head*: Length 0.65 mm, 0.61–0.65 mm; width 0.62 mm, 0.62–0.64 mm; vertex 0.25 mm, 0.22–0.26 mm. *Rostrum*: Length 2.28 mm, 2.24–2.52 mm, extending to abdominal segment V. *Antenna*: Segment I, length 0.48 mm, 0.46–0.55 mm; II, 1.13 mm, 1.09–1.24 mm; III, 0.52 mm (holotype only); IV missing on all specimens. *Pronotum*: Length 0.53 mm, 0.51–0.60 mm; width at base 1.14 mm, 1.12–1.18 mm. *Cuneus*: Length 0.44 mm, 0.42 mm; width at base 0.30 mm, 0.26–0.30 mm.

General color dark brown to fuscous with pale or white areas on the corium and cuneus. Head uniformly dark brown, anterior area around lorum and tylus somewhat paler on some specimens, eyes fuscous to black. Antennal segment I dark brown, segment II dark brown to fuscous, narrowly paler brown at base, apical fourth white; segments III and IV fuscous to black. Pronotum dark brown, calli prominent; mesoscutum and scutellum dark brown to reddish brown. Hemelytron dark brown, apex of clavus, a large spot on basal half of corium and on basal half to one third of cuneus white; membrane and veins uniformly smoky brown. Underside of body dark brown to fuscous. Pro- and mesocoxa dark brown, metacoxa pale or white; femora uniformly dark brown; tibiae, tarsi, and claws paler yellowish brown.

**Genitalia:** Aedeagus (Fig. 2); vesica (Figs. 3, 4), with spiculum and two large fields of spines on the side near the secondary gonopore. Left paramere (Figs. 5, 6) thickened and dilated at apex, with a field of long setae at middle. Right paramere (Figs. 7, 8) small, simple. Phallosome (Fig. 9) pointed apically.

*Female* (n = 1): Length 3.60 mm, width 1.16 mm. *Head*: Length 0.62 mm, width 0.57 mm, vertex 0.22 mm. *Rostrum*: Length 2.05 mm, extending to abdominal segment V. *Antenna*: Segment I, length 0.38 mm; II, 0.82 mm; III and IV missing. *Pronotum*: Length 0.46 mm, width at base 1.04 mm. *Cuneus*: Length 0.39 mm, width at base 0.25 mm. Similar to male in general shape and coloration.

**Distribution.**—Paraguay.

**Discussion.**—As a result of printer's errors, Carvalho and Costa (1994) spelled the specific epithet two ways, once with a "g" in their key (p. 68) and once with a "q" on their plate (p. 91). We follow the first spelling in their publication and use "*chaguemus*" with a "g."

Carvalho and Costa (1994) indicated that figure 80 of their plate (p. 91) represented the holotype of *F. chaguemus*. In many cases, it would be difficult or impossible to confidently recognize and associate omitted type material for a species. In the case of *F. chaguemus*, however, the holotype and three paratypes listed below were labeled by Carvalho and Costa (1994) and deposited in the collection of the [United States] National Museum of Natural History (USNM), Washington, DC. In addition, one of us (LAAC), a coauthor of the original paper and illustrator of the holotype and male genitalia, has verified the association of these specimens.

**Type material.**—Holotype ♂, Gran Chaco, Paraguay, 59–40 W, 22–23 N, 260 km west Paraguay Riv., VII-14-1935, Alberto Schulze (USNM). Paratypes: 2 ♂♂, 1 ♀, same data as for holotype, with dates ranging from 12–14 July 1935 (2 ♂♂, 1 ♀ USNM).

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